What is claimed is:

1. A method of making a tooling, comprising the steps of:

providing a substantially planar tooling having a first end and a second end opposing one another, a patterned side, and a back side opposite the patterned side;

placing the opposing ends together to form a substantially cylindrical shape forming a lumen therein, wherein the back side faces the lumen; and

welding the ends together from the lumen such that at least the opposing ends of the back side are joined.

2. The method of claim 1, wherein the step of welding the ends together comprises: welding the ends together from the lumen with less than 100% penetration of a resulting weld.

3. The method of claim 1, further comprising the step of: holding the opposing ends together using a fastener selected from the group of a mechanical clamp, a magnetic plate, or application of a vacuum.

4. The method of claim 1, wherein the substantially cylindrical shape has a substantially circular cross section.

5. The method of claim 1, wherein the method produces a joining line having a width of about 0.0025 mm to about 0.2 mm on the patterned side.

6. The method of claim 1, wherein the tooling comprises more than one tooling segment such that the tooling comprises more than one joining line having a width of about 0.0025 mm to about 0.2 mm on the patterned side.

7. The method of claim 1, wherein the tooling comprises a metal.

8. The method of claim 7, wherein the metal is selected from the group consisting of aluminum, brass, copper, nickel, and combinations thereof.

9. The method of claim 1, wherein the step of welding the opposing ends comprises: exposing the back side of the tooling to a laser selected from the group consisting of a carbon dioxide laser, a ruby laser, an Nd:glass laser, and an Nd:YAG laser.

10. The method of claim 1, wherein the step of welding the opposing ends comprises: exposing the back side of the tooling to a laser at a feed rate of about 2.5 cm/minute to about 1600 cm/minute.

11. The method of claim 1, wherein the step of welding the opposing ends comprises: exposing the back side of the tooling to a laser at a pulse rate of about 5 pulses per second to about 100 pulses per second.

12. The method of claim 1, wherein the step of welding the opposing ends comprises: exposing the back side of the tooling to a laser at a power per pulse of about 20 joules or less per pulse.

13. The method of claim 1, further comprising the step of: placing a heat sink adjacent to the patterned side after the stop of placing the opposing ends together.

14. The method of claim 1, wherein the step of placing the opposing ends together results in a joint selected from the group consisting of a butt joint, a wedge joint, an overlapping joint, or a raised ridge joint.

15. A mold produced by the tooling made by the method of claim 1, wherein the mold comprises a joining line having a width of about 0.0025 mm to about 0.2 mm on the patterned side.

16. The method of claim 1, wherein the patterned side of the planar tooling comprises a plurality of reflective elements in an array and the joined ends of the tooling form a joining line that is parallel to the array of reflective elements.

17. The method of claim 1, wherein the step of providing a substantially planar tooling comprises the step of assembling a plurality of tiles, thereby forming lay-up lines between adjacent tiles.

18. The method of claim 17, wherein the tiles comprise diamond-shaped and triangular-shaped tiles having a plurality of microstructure elements in an array and the lay-up lines between adjacent tiles are parallel to the array of microstructure elements.

19. An article comprising at least one patterned surface produced by the mold of claim 15, the at least one patterned surface having a seam of substantially the same width as the joining line of the mold.

20. A microstructured composite sheeting, comprising: a three dimensional array of cured microstructure elements formed from a polymeric material, wherein any seam present in the array has a width of about 0.0025 mm to about 0.2 mm on the patterned side.

21. A mold for making an article having a patterned surface, the mold comprising: a patterned surface outer surface, an inner surface, and a joining line having a weld penetration of less than about 100% of a tooling thickness.

22. A method of making a tooling, comprising the steps of:

providing a substantially planar tooling having a first end and a second end opposing one another, a patterned side comprising an array of mcirostructure elements, and a back side opposite the patterned side by assembling a plurality of tiles, thereby forming lay-up lines between adjacent tiles, wherein the lay-up lines between adjacent tiles are parallel to the array of microstructure elements;

placing the opposing ends together to form a substantially cylindrical shape forming a lumen therein, wherein the back side faces the lumen; and

joining the ends together such that at least the opposing ends of the back side are joined.

23. The method of claim 22, wherein the joining step comprises welding the ends together from the lumen.

24. The method of claim 22, wherein the tooling comprises a plastic sheet.

25. The method of claim 24, wherein the joining step comprises heat welding or adhesive bonding the ends of the plastic sheet.